

Finite Internal Temperature Slide for Use with Colloid Experiments, Phase I

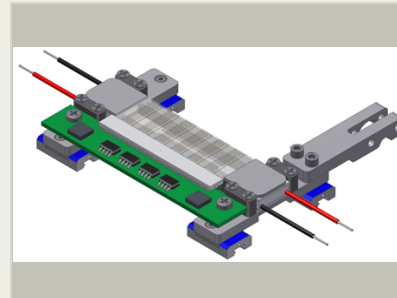
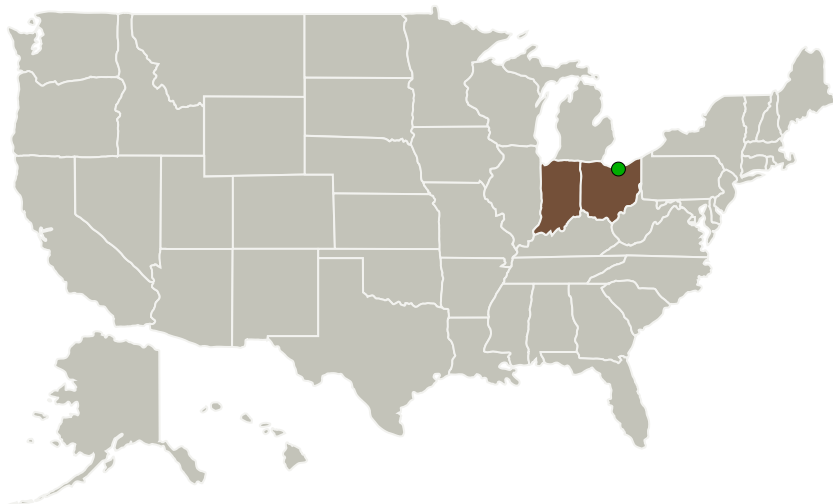
Completed Technology Project (2014 - 2014)



Project Introduction

The Light Microscopy Module (LMM), developed and managed by NASA Glenn Research Center (GRC), is producing fascinating results. LMM will yield even more astonishing results with the addition of enhancing subsystems. Techshot is developing one such subsystem, the LMM-Dynamic Stage (LMM-DS), which will satisfy a host of new experiments. However, GRC has many more researchers awaiting enhancing subsystems for conducting experiments that could lead to new materials with significant commercial potential. Capitalizing on Techshot's rapid progress with the LMM-DS, its vast array of mixing and separations technologies, and its experience with microfluidic systems, Techshot proposes development of a Finite Internal Temperature Slide (FITS) — a hollow microscope slide capable of taking temperature measurements of a sample along the length of a slide without significant optical interference. Additionally this technology will apply heating to the sample by passing a current through the resistive path used for temperature measurement. This allows for more accurate, varied and controlled temperature gradients to be applied across a sample volume while maintaining optical clarity. FITS is a direct result of a need expressed by current NASA funded Principal Investigators who intend to use the LMM for experiments in which temperature, and/or temperature gradients, must be precisely controlled.

Primary U.S. Work Locations and Key Partners



Finite Internal Temperature
Slide for Use with Colloid
Experiments Project Image

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Organizations Performing Work	Role	Type	Location
Techshot, Inc.	Lead Organization	Industry	Greenville, Indiana
● Glenn Research Center(GRC)	Supporting Organization	NASA Center	Cleveland, Ohio

Primary U.S. Work Locations	
Indiana	Ohio

Project Transitions

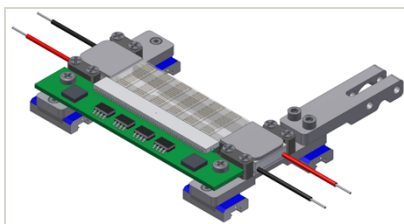
▶ **June 2014:** Project Start

✓ **December 2014:** Closed out

Closeout Documentation:

- Final Summary Chart(<https://techport.nasa.gov/file/137556>)

Images



Project Image

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for Use with Colloid Experiments
Project Image

(<https://techport.nasa.gov/image/126464>)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Techshot, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

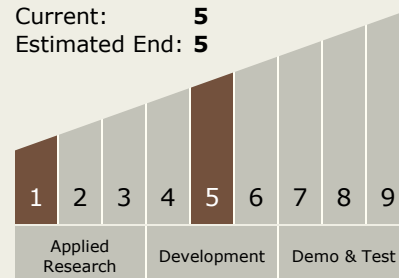
Carlos Torrez

Principal Investigator:

Michael Kurk

Technology Maturity (TRL)

Start: **1**
Current: **5**
Estimated End: **5**



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Technology Areas

Primary:

- TX08 Sensors and Instruments
 - └ TX08.1 Remote Sensing Instruments/Sensors
 - └ TX08.1.3 Optical Components

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System